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RUSH & WELLS,
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PAUL WEBER,
Attorney and Counselor at Law,
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REMOVAL.

J. C. COGSWELL, Dentist, has removed his office from 230 Kearney street to the Young Men's Christian Association Building, 233 Sutter street, near Kearny, San Francisco. The rooms are elegant, convenient and well ventilated. Friends and patrons are invited to call.

Babbitt Metal

In Quantities to Suit Purchasers

-AT THE-

SENTINEL OFFICE.

Castle Dome.

Far beyond the Desert's sands,
In fabled diamond lands,
There a wondrous mountain stands,
That towering Castle Dome.
'Tis about that mountain old,
Many stories you'll be told,
How the shining king of gold
Has that castle for his home.
You see it from each highland,
You behold it from the plain,
'Tis like a signal island,
For the sailors on the main,
A land-mark for those regions,
With outlines bold and grand,
And many are the legends
You'll hear in that wild land,
About that weird old mountain,
With sombre clouded shadow,
That pictured Castle Dome,
Of Rio Colorado.

In fabled fields so fairy,
I've built my castles airy,
Till mind refused to carry,
The imagings it wrought,
And the wildly running brain
Had forged and endless chain,
With no ending in the train
Of its ever grasping thought.
Then halting, I have pondered
Of the fancies of the mind,
Till the spirit wandered,
Seeking spirits of its kind,
Unto that shadowy distance
That oft-times is so seeming,
As 'twere a new existence
We fancy in our dreaming;
When earthly toils and sorrows
Are still on the river's side,
But the soul hath glimpses over,
To white shore beyond the tide.

But in the wildest soaring
In romantic fiction's field,
Mind had never figured
What mine eyes did behold,
'Neath that castellated Dome
Where earth herself had seated,
The home of her great king,
The Royal King of Gold. * * *

-Sam W. Smith.

Reducing Refractory Ores.

It is a well known fact that this State abounds in mines, the ore from which could not be worked by the ordinary means of the rebellious matter they contained. It is well known also that these ores contained a large percentage of gold and silver, but notwithstanding experiments without number have been tried from time to time, with a view to separating gold and silver from the base metal, all efforts in that direction have proved failures. At last, however, a system has been discovered and patented by John A. Robertson, of Oakland, which is known as the Electric Process, which threatens to revolutionize the entire business of successful treatment of ores which were heretofore regarded as worthless. Experiments on a small scale were made with the process some time ago, and the results were so satisfactory that within a short time extensive works, for the testing of the principle on a large scale, have been erected in Sacramento, at Thirty-first and J streets, adjoining Clark's pottery, and their working has been so successful as to warrant the proprietors in the expenditure of a large sum of money to carry on the business.

The process is very simple, and the object is to perform in a single operation what has required two or three operations and much time to effect in the process of extracting precious metals from rebellious ores—that is to say, by thoroughly desulphurizing the ore and bringing the precious metal to a condition to amalgamate freely, aggregating the same and freeing it entirely from the influence and union with the base metals.

To effect this object there is placed a vat or receiver of sufficient capacity to hold the ore of the most convenient quantity—say one ton—and immerse the same in a quantity of water sufficient to cover it. The required quantity of salt to make a thick brine, or as much as can be held in solution with the same, is then used, adding thereto about one-half pound of cyanide of potassium, and one-half pound of sulphate of copper, forming a solution of salt and cyanide of potassium in the above described manner. The ton or other desired quantity of ore is slowly heated to a red heat, and afterward plunged, while red-hot, into the aforesaid solution, the ore being broken up to about the same size that is broken for milling. By bringing the ore in contact with the solution it becomes entirely desulphurized.

The entire operation of desulphurizing and disintegrating the quartz and sulphurets is almost instantaneous.

Little rubbing that it may be readily prepared for amalgamating in an ordinary amalgamating pan.

The action of the cyanide of potassium, in connection with the sulphate of copper, cleans, brightens, and immediately prepares the precious metals for amalgamation with the quicksilver, no matter how fine and impalpable the same may be.

The solution composed of the above ingredients, and the manner of treating the ore previous to its being brought in contact with the same, render the operation of extracting the precious metals from the ore very simple and effectual and accomplish it in a very short time.

The works adjoining Clark's Pottery have a capacity of one ton per hour, the cost of chemicals will not exceed \$1 per ton and two cords of wood will run the furnace twenty-four hours.

Such is the excitement which this new discovery has created that of late numbers of mining men from San Francisco, Los Angeles, Shasta, El Dorado, Placer and other counties have visited this city and thoroughly inspected the workings of the new process and its wonderful results for themselves.

Among the samples were a lot from what is known as the Gold Deposit of El Dorado county, seven miles from Placerville, from which nothing could heretofore be obtained. By the electric process however, this ore yielded about \$2,000 per ton, and so favorably impressed are the owners of claims in that vicinity with this invention that several carloads are to be sent down and worked at an early day.

Near Lake oes, than which none more refractory were ever known, have also been successfully worked and made to yield handsomely by this process. One pound of sulphurets from Greenwood, El Dorado county, which was worked here recently, which ore had been heretofore regarded as worthless, yielded \$1,500 per ton, and many other similar illustrations of the success of this new process might be quoted.

On Wednesday last a clean-up was had of the working of one ton of ore from the Washington mine, Mariposa county, and the result was a yield of \$30 per ton, while at the mill only \$8 or \$9 can be saved by the chloridization process.

From a pound of refractory ores from Auburn a test by the new process yielded a gold button the size of a large pin-head.

Negotiations have already been entered into for the shipment of large quantities of ore from various localities to this city for treatment by the new process, and in a few days the works will be started up to their full capacity.

At Sweetser & Alsip's office, on Fourth street, between J and K, can be seen the first bar ever produced by this process. The ore was from the Enterprise mine in Mariposa county, very base, and at the mill only \$13.25 was saved. Nine tons of ore were worked by the new process, and the result was a yield of \$50 per ton. Some of the gold was kept for small specimens, but the bar, which is about 3 1/2 x 2 1/2 inches in size and 1 1/2 inches thick, is valued at \$445.

The discovery is a wonderful one and its ultimate benefits are incalculable.—*Sacramento Bee.*

Advantages of Copper over Silver Mining.

Silver is not being worked beyond 70 or 80 per cent. of its assay value, and when obtained has to be sold at a discount of 20 per cent., and pays in express charges and commissions another 5 per cent.—making a total reduction of say 50 per cent. from assay certificate,—in addition to mining and reduction charges.

Example—Assay value, \$100 per ton:
Mining, say.....\$ 2.00
Hauling.....5.00
Reduction.....30.00
Loss in reduction.....25.00
Discount, 20 per cent.....15.00
Expressage, etc., 5 per cent.....3.75

Total.....\$ 80.75
Leaving a profit of \$19.25 per ton of ore. Copper, on the other hand can be worked to 1/2 per cent. of its assay value, and is sold at its full market price without discount, paying ordinary merchandise freightage, being unattended with risk of robbery.

Example—Assay value, as above estimates on 25 per cent. ore, \$75 per ton: mining, hauling, reduction, and freight to market, \$12.15—leaving a profit of \$32.85 per ton (\$3.80 per cent.), or more than double the profit obtainable from silver ores of same assay value.

W. T. RICKARD, F. C. S.
Assay Office, Tucson, Me.
(The above is an extract from an interesting article in the *Tucson Star*.)

Cassava.

[Correspondence of The South.]

So much has been written in praise of the orange, that it is seldom that the various other productions of Florida are mentioned. Thus the numerous settlers from all parts of the Union, who have come here and entered upon orange culture, are left to find out for themselves the other valuable products which surround them in their new homes. The orange, however, is of slow growth, and the settler is often sorely troubled to find out how a living can be made until the happy year arrives when he shall begin to ship his fruit. While the fortunate few can purchase healthy "six year olds," and have them set out in symmetrical groves, the majority are forced to exercise a long term of patient expectation. For the benefit of these latter, it would be well if more attention was called to some of the humbler, yet, nevertheless, important products of our State.

For most amongst these products stands the long neglected Cassava, a plant wonderful for its starch producing qualities and of the greatest general utility. Strange to say, very few of those who visit Florida ever have their attention called to it; and stranger still, many of the settlers even, are ignorant of the fact that so valuable a product is at their command. The entire plant, both root and branch, is of service.

Cattle grow fat upon the tender, juicy stems, and are particularly fond of the roots, which should be sliced up for them. Hogs fatten upon them; and when they are turned into the "cassava patch" they will grub up the roots for themselves. Chickens, geese, and dogs even, exhibit great fondness for cassava, and eat the roots, either raw or boiled. The roots when peeled and grated are made into griddle cakes, pies, puddings and various other palatable dishes, while the tapoca which is a preparation of the root and described later, is another pleasant addition to the settler's fare.

Cassava is an annual, and grows equally well on either pine or hammock land. It is a highly ornamental plant, a peculiar feature of it being its perfect symmetry. Generally, it grows with three main stems which are very tender and full of pith. When about two feet high each of these stems subdivides into three others, and so on. The leaves are delicate and five-pointed and the leaf stems slender and red. The roots are the valuable portion of the plant. They are very long, frequently over three feet in length, and often eight or ten inches in circumference; and of these there will be found six or eight to each stalk. These roots have a thin brown skin, like the potato, which is very readily removed; the inside is tender and of a beautiful creamy white.

Cassava is planted at any time from January to March. The method resembles cane planting. Bits of the matured wood of the tops, broken into lengths of six or seven inches, are dropped four or five feet apart, in a furrow, and covered either by the plough or hoe. The rows should be at least eight feet apart. It may be crowded in the drill, but it must have room between the rows. Generally it receives no further attention, after planting; but where a large crop is set out, it will repay the settler to work it occasionally.

Although so useful for stock, it is more particularly on account of its wonderful adaptability for making starch that greater attention should be called to the Cassava plant. The common method employed down here, by those who make their own starch is very simple. The roots being first peeled and washed, are grated. When a sufficient amount has been thus prepared, cold water is added to the mass, which is stirred around in a large pan. The starch granules sink to the bottom, while the fibrous portion is dipped out; fresh water is poured in, and the mass is again stirred, and then allowed to settle. This is repeated till the starch has been washed perfectly clean. The water is carefully poured off and the pan is placed in the sun till the starch is perfectly dry.

Tapoca is made by simply putting a quantity of the fresh pulp into a shallow iron pot over a small fire, and stirring it briskly with an iron rod. The pulp drying in this manner, is partially converted into dextrine, and the constant stirring breaks up the pulpy mass, giving it that irregular, rocky appearance so peculiar to Tapoca. When it is generally known how easily Cassava can be raised, how entirely free it is from all ravages of insects and disease, and above all, when its

starch yield is taken into account, it is certain that then the great starch manufacturers of the North will turn their attention towards utilizing and developing this valuable plant. It is not, therefore, an improbable assertion to say that Cassava will yet become one of the great staple crops of our sunny Peninsula.

Dates for Food.

The attention of the poorer classes, says an English exchange, is directed to the suitability of dates as an article of food at once cheap and nutritious. Dates are extensively consumed by the lower orders in Egypt, as also by the Arabs in the Persian Gulf, with whom dates and bread form the principal diet. Those in better circumstances cook them in different ways, such as frying them with a little butter or making them into an omelet with eggs. Formerly the only dates imported into the London market were those from Egypt, called Tafflat, which were and are still sold by grocers at from eightpence to tenpence per pound. But the Tafflat, albeit a large and fine-looking fruit, have a tough skin, and are far less succulent and nutritious than those now brought from Al-Basrah and the Persian Gulf. These latter are disposed of wholesale in boxes or straw sacks at from ten shillings to fourteen shillings per hundred-weight, and are hawked about the street for from twopence to fourpence to pound. A more general demand for the fruit would probably lower the retail price and it would be a great boon to the poorer classes if they could be convinced that one pound of dates, costing about three halfpence, contains as much nutriment as half a pound of meat, and as much more than the same weight of many of the articles of food for which they pay six or ten times the price.

Re-Location.

In answer to "One Interested," we may state the rule governing the re-location of abandoned claims, to be as follows:

"The re-location of abandoned lode claims shall be by staking a new discovery shaft and fixing new boundaries, in the manner as if it were the location of a new claim; or the re-locator may sink the original discovery shaft ten feet deeper than it was at the time of abandonment and erect new or adopt the old boundaries, renewing the posts if removed or destroyed. In either case a new location stake shall be erected. In any case, whether the whole or part of an abandoned claim is taken, the location certificate may state that the whole or any part of the location is located as abandoned property."

It has also been decided very recently that in case of a re-located mine in dispute, a hearing is necessary to secure all the facts as to re-location, abandonment, &c., &c.

On the other hand, what constitutes abandonment has been decided to be the intention:

"An abandonment takes place when the ground is left by the locator, without any intention of returning or making any further use of it, independent of any mining rule or regulation."—*St. John v. Kuhl*, 36 Cal., 263. —*Mining Record*.

Soldiers' Arrears of Pay Due.

The Secretary of War transmitted to the Senate a communication from the Second Auditor of the Treasury, stating that although by the last deficiency act Congress appropriated \$50,000 for the payment of claims of colored volunteer soldiers which may be audited prior to July 1, 1880, no provision has been made for the payment of arrears of pay, &c., to white volunteer soldiers whose claims have been audited since January 6, 1876. Auditor French estimates that \$235,000 will be required to pay the latter class of claims between the date and July, 1880; and Secretary McCrary, in transmitting his communication, recommends legislation to place the claims of white and colored soldiers upon the same footing as to payment.

A PARTY of gentlemen from New York and Boston, now at the Palace Hotel, representing an Eastern syndicate for coining a large amount of money, have notified their friends that they are open for Arizona and Nevada gold-mining, but that they have decided not to touch anything in California in the way of mining. They are evidently not impressed favorably with the New Constitution.—*New Letter*.

Deposits of coal have been discovered in the Little Colorado by the U. S. Geological party.

DAVID NEAHR

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